Errata

Page 45, second line from below:

$$t \leq t' \quad \text{read:} \quad t < t'$$

Page 110, equation (2.20):

$$2\log(1+c)/2 \quad \text{read:} \quad -2\log(1+c)/2$$

Page 111, equation (2.26):

$$2\log c \quad \text{read:} \quad -2\log c$$

Page 141, second line below equation (2.79):

$$D_{\Phi L} \quad \text{read:} \quad D_{L\Phi}$$

Page 141, fifth line below equation (2.79):

$$D_{L\Phi} \quad \text{read:} \quad D_{\Phi L}$$

Page 37. Section 1.3.7. should be replaced by the following text:

1.3.7 Appendix: proofsketch of lemma 7

Let $(P,\mu) \prec (Q,\nu)$ and let these schemes be ordered according to (1.31) and (1.32). We must show that the relation $M(P,\mu) < M(Q,\nu)$ follows from application of (1.34). Let $F(x)$ and $G(x)$ represent the cumulative functions of (P,μ) and $Q,\nu)$ respectively. The function F is given by

$$F(x) = \begin{cases} p_1/\mu_1 & \text{for } 0 \leq x \leq \mu_1 \\ p_1 + \frac{p_2}{\mu_2}(x-\mu_1) & \text{for } \mu_1 \leq x \leq \mu_2 \\ p_1 + p_2 + \frac{p_3}{\mu_3}(x-\mu_1-\mu_2) & \text{for } \mu_2 \leq x \leq \mu_3 \\ \vdots & \vdots \end{cases}$$

similar equations hold for $G(x)$. By lemma 6 we have $F \leq G$. (Cf. figure 1.7.) Now consider the function defined by

$$F'(x) = \begin{cases} \min\{G(x);\, p_1 + \frac{p_2}{\mu_2}(x-\mu_1)\} & \text{for } 0 \leq x \leq \mu_1 \\ F(x) & \text{for } \mu_1 \leq x \end{cases}$$

(See also figure A.) The function F' is obtained from F by extending its second linear piece to the left until it intersects with G. Clearly, F' is also a continuous concave function. It corresponds to a probability scheme of the form

$$(P',\mu') = \begin{pmatrix} q_1, & \ldots, q_{k-1}, & \epsilon q_k, & \xi p_2, & p_2, \ldots, p_n \\ \nu_1, & \ldots, \nu_{k-1}, & \epsilon \nu_k, & \xi \mu_2, & \mu_2, \ldots, \mu_n \end{pmatrix}$$

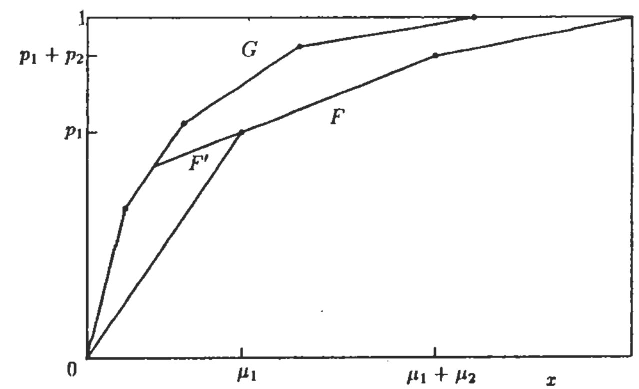

Figure A: The functions $F(x)$, $G(x)$ and $F'(x)$.

for some $1 \leq k \leq m$ and $\epsilon, \xi \leq 1$. Now, (P',μ') represents a refinement of (P,μ). Hence, by (1.34), we have $M(P,\mu) \leq M(P',\mu')$. Also, by construction, we have $(P',\mu') \prec (Q,\nu)$. Moreover, the function F' has at most $n-1$ linear pieces on which it differs from G.

The procedure can now be repeated by defining a second function

$$F''(x) = \begin{cases} \min\{G(x);\, p_1 + p_2 + \frac{p_3}{\mu_3}(x-\mu_1-\mu_2))\} & \text{for } 0 \leq x \leq \mu_1 + \mu_2 \\ F(x) & \text{for } \mu_2 \leq x \end{cases}$$

which represents a scheme obtained by a refinement of (P',μ'). Iterating in this manner, we obtain a finite series of schemes, related by refinements, which approaches (Q,ν). Hence:

$$M(P,\mu) \leq M(P',\mu') \leq \cdots \leq M(P''',\mu''') = M(Q,\nu)$$

To establish strict Schur convexity, it is sufficient to note that if $F \neq G$, at least one of the refinements in this series will also be strict, and hence, by (1.34), we will have $M(P,\mu) < M(Q,\nu)$. ∎